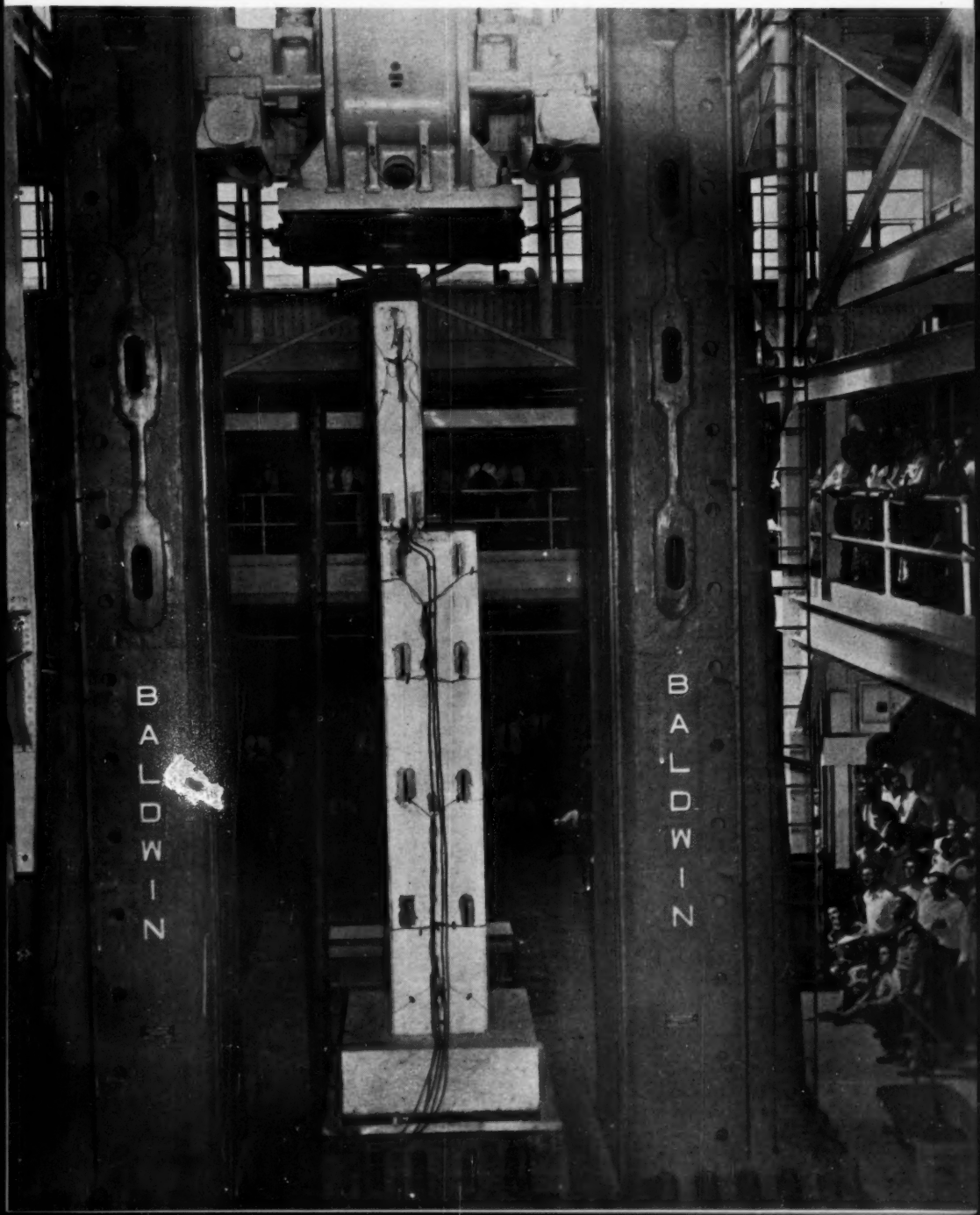
ACI News Letter

Vol. 25, No. 5 JOURNAL of the AMERICAN CONCRETE INSTITUTE January 1954



NEWS ABOUT ANOTHER PREPAKT DEVELOPMENT—

Simplified Technique Produces Improved Tunnel and Shaft Linings

A new Prepakt technique has proved highly successful in the lining or relining of various type tunnels. It is particularly suited for use on power plant installations —penstocks, draft tubes, pressure shafts and other tunnels.

This simplified technique is applicable where a steel lining is used or where forms are built. In either case, coarse aggregate is preplaced in the annular space, then Intrusion Mortar is pumped in to completely fill all voids and form Prepakt Concrete.

Important economies and advantages are achieved with the Prepakt method:

(1) Seams and fissures in existing tunnel outlines are completely filled by Intrusion Mortar as it is pumped into preplaced aggregate.

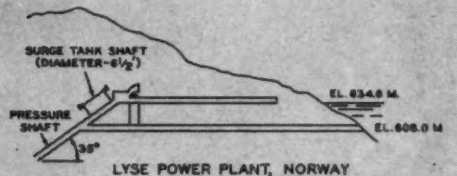
(2) Complete crown filling is assured in one operation.

(3) A strong, monolithic lining is produced by Prepakt Concrete's low setting and thermal shrinkage.

These superior results are achieved at costs equal to or lower than those obtained by competitive methods.

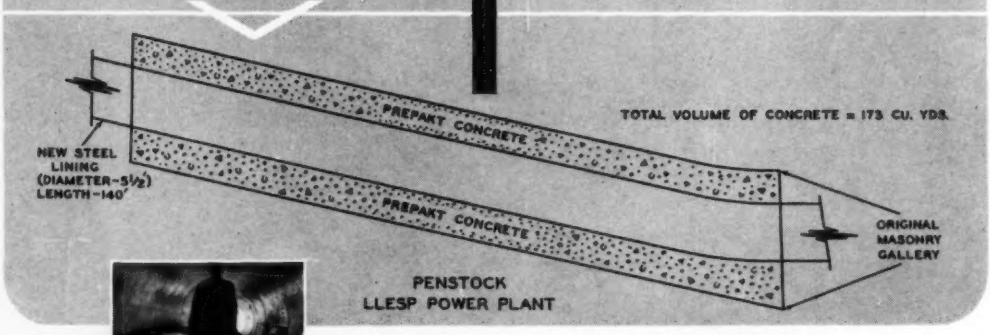
Two typical projects illustrating applications of this Prepakt development are presented below. For complete information on Prepakt methods and materials, contact the Main Office, Room 779-J, Union Commerce Bldg., Cleveland.

Prepakt Concrete was employed in a test installation at the Lyse Power Plant in Norway. A/S Grunnboring constructed surge tank shaft with formwork, reported excellent results.



LYSE POWER PLANT, NORWAY

New steel linings for penstock (drawing shown) and draft tube at Llesp hydroelectric plant in the Spanish Pyrenees Mountains were embedded by Prepakt Iberica, S. A.



PENSTOCK
LLESP POWER PLANT

Intrusion Mortar was pumped through steel lining to consolidate preplaced aggregate in annular space between old penstock wall and steel shell.

CONTRACTORS PREPAKT ENGINEERS

INTRUSION-PREPAKT, INC.
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ACI

News Letter Contents

January 1954

On the Cover—A 22-ft reinforced concrete column being tested in the 5,000,000-lb capacity testing machine at the Bureau of Reclamation's Engineering Laboratories, Denver, Colo. A tour through the laboratories is one of the features of the Golden Anniversary Convention. — *Courtesy U. S. Bureau of Reclamation*

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— 1954 Convention Program —

Monday, February 22

9:00 a.m. and 2:00 p.m.—Technical Committee meetings—Titles of committees scheduling meetings for this first day of the convention, and the rooms in which they will meet, will be posted on bulletin board near the Registration Desk.

10:00 a.m.—Registration—Empire Room Lobby
—Exhibits—Empire Room

8:00 p.m.—Anniversary Dinner—Lincoln Room—Principal speaker—Admiral Joseph F. Jelley, Director of Construction, Department of Defense.

Tuesday, February 23

9:00 a.m.—Registration continues

10:00 a.m.—Lincoln Room—Opening remarks by President Henry L. Kennedy and appointment of Tellers to canvass annual election ballots.

STANDARDS

Proposed Standard Specifications for the Design and Construction of Reinforced Chimneys—report of Committee 505, E. A. Dockstader, chairman

See ACI JOURNAL, January 1953. This proposed standard sets forth requirements for the design of reinforced concrete chimneys and outlines construction procedures.

Proposed Recommended Practice for Selecting Proportions for Concrete—report of Committee 613, W. H. Price, chairman

See ACI JOURNAL, October 1953, for the text of this proposed standard which is released by the committee with the intention that it supersede "Recommended Practice for the Design of Concrete Mixes (ACI 613-44)." The proposed standard contains tables which, along with laboratory tests and physical properties of fine and coarse aggregate, yield information rapidly for obtaining concrete proportions. Three examples are included for the design of air-entrained and non-air-entrained mixes utilizing the tables.

Continued on p. 4

GENERAL

ACI History—Raymond E. Davis, director emeritus, Engineering Materials Laboratory, University of California, will summarize 50 years of development of the American Concrete Institute from its beginning in 1904.

MOTION PICTURE

How to Transport, Place, Cure, and Finish Quality Concrete

This second ACI-PCA film on making good concrete will be introduced by Prof. James A. McCarthy, Notre Dame University, chairman of the ACI Film Advisory Committee which passed on the technical details of the film.

2:00 p.m.—Lincoln Room—President Henry L. Kennedy, chairman

Economic Trends Affecting Concrete Construction—Norman P. Mason, Chamber of Commerce of the United States

Selection of Construction Materials—Admiral Joseph F. Jelley, Director of Construction, Department of Defense

The Place of Concrete in Bureau of Reclamation Construction—W. A. Dexheimer, Commissioner, U. S. Bureau of Reclamation

Use of Concrete by the Corps of Engineers—Major General Samuel D. Sturgis, Jr., Chief of Engineers, United States Army

8:00 p.m.—Silver Spruce Room—Meeting of Committee 318, Standard Building Code

8:30 p.m.—Colorado Room

MOTION PICTURES

"Use of Concrete by the Corps of Engineers"

"Prestressed Concrete Cylinder Piling Being Used for Off-Shore Work in the Gulf Coast Region"

"How to Transport, Place, Cure, and Finish Quality Concrete"

"Namao"

Wednesday, February 24

Concurrent sessions will be held morning and afternoon in the **Lincoln Room** and the **Colorado Room**.

9:00 a.m.—Lincoln Room—Vice-President Charles S. Whitney, chairman

DESIGN

Resistance of Concrete Structures to Effects of Atomic Blasts—C. S. Whitney, Ammann and Whitney, New York, N. Y.

Inelastic Analysis and Ultimate Load Design of Reinforced Concrete Cylindrical Thin-Shell Roofs—George C. Ernst, R. R. Marlette, and Glen V. Berg, University of Nebraska, Lincoln, Neb.

Model Analysis of Skewed Rigid Frame Bridge and Slab—D. H. Pletta, Virginia Polytechnic Institute, Blacksburg, Va.

Design Criteria for Concrete Dams—John Hammond, U. S. Bureau of Reclamation, Denver, Colo.

Analysis of a Typical Interior Square Bay Flat Slab of Uniform Thickness by the Presan Method—R. F. Shaffer, Presan Corp., Los Angeles, Calif.

9:00 a.m.—Lincoln Room—Vice-President C. H. Scholer, chairman

GENERAL

Design and Construction of a Folded Plate Roof Structure—Milo S. Ketchum, consulting engineer, Denver, Colo.

Structural Applications of Hyperbolic Paraboloids—Felix Candela, architect, Mexico City, Mexico.

Combined Form and Reinforcing for Concrete Slabs—Bengt F. Friberg, consulting engineer, St. Louis, Mo.

Cellular Concrete—Rudolph C. Valore, Jr., Structural Engineering Section, Bureau of Standards, Washington, D. C.

Factors Influencing the Strength of Concrete as Revealed by a Six-Year Record of Concrete Control—Joseph J. Waddell, Palmer and Baker, Inc., Consulting Engineers and Architects, New Orleans, La.

AWARDS LUNCHEON

12:15 p.m.—Lincoln Room—President Kennedy presents ACI Awards

Report of tellers and introduction of new officers

Announcement of Honorary Member

Recognition of retiring directors and officers

Retiring president's address

2:30 p.m.—Lincoln Room—Past-President R. F. Blanks, chairman

MATERIALS AND PROPERTIES

Admixtures in Concrete—W. T. Moran, chairman, ACI Committee 212

Effect of Age of Concrete on its Resistance to Scaling Caused by Using Calcium Chloride for Ice Removal—W. C. Hansen, manager, Research Laboratories, Universal Atlas Cement Co., Gary, Ind.

Void Spacing as a Basis for Producing Air-Entrained Concrete—T. C. Powers, Portland Cement Assn., Chicago, Ill.

Fundamental Factors in the Drying Shrinkage of Concrete Block—George L. Kalousek, Research Division, Owens Illinois Glass Co., Toledo, Ohio

A Method for Determining the Original Water Content of Portland Cement Concrete—Prof. James S. Blackman, Department of Civil Engineering, University of Nebraska, Lincoln, Neb.

2:30 p.m.—Lincoln Room——Director Frank Kerekes, chairman

PRECAST AND PRESTRESSED CONCRETE

Sandwich-Type Precast Concrete Construction—F. Thomas Collins, consulting engineer, San Gabriel, Calif.

Precast Concrete Hangar—O. Safir, consulting engineer, Vancouver, B. C., Canada

Precast Concrete Construction—Orley Phillips, president, Phillips, Carter, and Osborn, Inc., Denver, Colo.

Formulas for the Rapid Design of Continuous Prestressed Concrete Members—Prof. E. I. Fiesenheiser, Illinois Institute of Technology, Chicago, Ill.

Fatigue Tests of Prestressed Beams—P. W. Abeles, consulting engineer, London, England

Thursday, February 25

Sessions to be held at the **Bureau of Reclamation Laboratories,** Denver Federal Center, Denver, Colo.

9:00 a.m. — Theater — Annual open meeting of ACI Committee 115, Research; S. J. Chamberlin, chairman; G. W. Washa, secretary

This convention feature differs from general sessions in that the information is not released for publication. A group of short papers will be presented on research techniques and preliminary results on fatigue and impact of prestressed concrete beams, shear strength of concrete, frame members without shear reinforcement, repetitive loading of precast prestressed concrete bridge members, early strength of concrete, volume change and stress-strain characteristics of concrete, fiber glass tension members as reinforcement, effect of alkalies released by pozzolanas on alkali-aggregate reaction in mortar, effect of steam curing and vibration on concrete durability, use of strain gages, and jet-blast resistant concrete.

12:00 noon—Chuck Wagon Lunch

2:00 p.m.—Tour of Bureau of Reclamation Laboratories

Room reservations for the Shirley-Savoy, or for other hotels conveniently located, will be facilitated if made through the Denver Convention and Visitors Bureau, 225 West Colfax Ave., Denver, Colo.

Golden Anniversary Convention

..... *promises to be best yet*

Technical sessions and special features highlight an outstanding program

ACI's Golden Anniversary Convention, to be held in Denver, Colo., February 22-25, in the Shirley-Savoy Hotel, is expected to attract about 1000 concrete engineers, scientists, and technicians.

R. F. Blanks, convention committee chairman, promises that the four days will be crammed with interesting technical sessions and many special features including exhibits, tours, and entertainment.

Headliners for the technical sessions include Admiral Joseph F. Jelley, Director of Construction for the Department of Defense; W. A. Dexheimer, Commissioner of the Bureau of Reclamation; Major General Samuel D. Sturgis, Chief of Engineers, United States Army; and Norman P. Mason, Chamber of Commerce of the United States. Professor R. E. Davis of the University of California will sound the historical note by reviewing ACI's half-century record, while most of the other speakers concentrate on current problems and techniques.

Registrations and technical committee meetings will be held on February 22. That evening, leaders of science, education, and industry are invited to attend the featured Anniversary Dinner. Principle speaker for the evening will be Admiral Joseph F. Jelley, Director of Construction, Department of Defense (formerly chief, Bureau of Yards and Docks, Department of the Navy). Admiral Jelley is a member of ACI's Board of Direction.

Admiral Jelley's duties in the Department of Defense, under Franklin G. Floete, Assistant Secretary for Properties and Installations, include aiding the assistant secretary in such matters as advice and assistance to the Secretary of Defense and his staff in matters pertaining to military construction.

Before departure from the Bureau of Yards and Docks, Admiral Jelley served there almost eight years, first as deputy and assistant chief and then as chief. Prior to this he served at Pearl Harbor, Norfolk, Washington Navy Yard, Alameda, and San Pedro, Calif. During World War II, Admiral Jelley served as deputy director, Construction Department, Bureau of Yards and Docks; officer in charge, Chicago Advanced Base Division; and executive officer, Fifth Naval Construction Brigade on Guam.

The following two days will be devoted to technical meetings and the Awards Luncheon and a dinner dance are scheduled for February 24. On February 25, the conventioners are to meet at the Laboratories of the Bureau of Reclamation for the Research Session, and also to savor a buffalo barbeque chuck-wagon lunch and to tour these famous laboratories. Walter H. Price, member of ACI's Board of Direction, is head of the laboratories.

Exhibits of industry, representing the latest in materials and equipment for making good concrete, will be displayed beginning February 22.

Tours are arranged for those wishing to enjoy the beauties of Denver and its mountains.

Room reservations for the Shirley-Savoy, or for other hotels conveniently located, will be facilitated if made through the Denver Convention and Visitors Bureau, 225 West Colfax Ave.

Ladies program for Golden Anniversary Convention

Wives of American Concrete Institute members are assured of a full program of events, especially planned for their interest and enjoyment, when they attend the Institute's annual convention February 22-25, in Denver.

Two events dominate—a luncheon at the world-famous Broadmoor Hotel and tea at the lush and colorful Wolhurst Saddle Club. The Broadmoor is at the foot of Pike's Peak at Colorado Springs, 70 miles south of Denver. Wolhurst formerly was the home of a United States Senator and is now one of Denver's exclusive clubs.

The luncheon will be on Tuesday, February 23. The tea, on the following day, will feature a talk on "Colorful Characters of Colorado" by Miss Caroline Bancroft, author, lecturer, and historian. A "get-acquainted" coffee will be held Monday and another coffee on Thursday, both in the Brown Palace Hotel.

Mrs. W. H. Price is chairman of the Ladies Committee. Sight-seeing tours of Denver or the nearby Rocky Mountains can be arranged if desired.

RECENT APPOINTMENTS TO ACI TECHNICAL COMMITTEES

Included in this list are *new* appointments to ACI technical committees only.

Committee 115, Research

H. C. Ross
Hydro-Electric Power Commission of Ontario
W. R. Schriever
National Research Council of Canada

Committee 207, Properties of Mass Concrete

J. Laginha Serafim
Ministerio das Obras Publicas, Portugal

Committee 208, Bond Stress

A. L. Parme
Portland Cement Assn.

Committee 209, Volume Changes and Plastic Flow in Concrete

Herbert K. Cook
Waterways Experiment Station
P. G. Fluck
University of Wisconsin
Alfred M. Freudenthal
Columbia University
D. E. Parsons
National Bureau of Standards
Jerome M. Raphael
University of California
Robert Sailer
U. S. Bureau of Reclamation
Charles H. Scholer
Kansas State College

Committee 212, Admixtures

Hubert F. McDonell
Florida State Road Department

Committee 213, Properties of Lightweight Aggregates and Lightweight Aggregate Concrete

Frank B. Brown
Wire Reinforcement Institute, Inc.
Frank G. Erskine
Expanded Shale Institute
Rudolph C. Valore, Jr.
National Bureau of Standards

Committee 315, Detailing Reinforced Concrete Structures

M. D. Brody
Bethlehem Steel Co., Inc.

Continued on p. 25

Positions and Projects — ACI Members

Moreell appointed to Hoover Commission

Former President Herbert Hoover has named Admiral Ben Moreell, chairman of the board, Jones and Laughlin Steel Corp., to head the task force on water and power resources.

The Hoover Commission is charged with the job of advising President Eisenhower and Congress what businesses the federal government should get out of—in addition to recommending a regrouping of executive agencies to handle remaining functions.

Mr. Hoover is preparing to appoint the remaining members of the task force. Once membership is complete, Admiral Moreell will call an organization meeting. At that time it is expected that the task force will set up its guiding committee and separate groups to study subdivisions of the water and power resources field.

Portland Cement Assn. elections

R. A. Hummel, chairman, Lone Star Cement Corp., New York, N. Y., was re-elected chairman of the board of directors of the Portland Cement Assn. at its annual meeting in November. Mr. Hummel has served as chairman of the board for the past year.

Five directors were also elected, and include: Charles Horner, president and general manager, Kosmos Portland Cement Co., Louisville, Ky.; Max E. Grunewald, president, Coplay Cement Manufacturing Co., Coplay, Pa.; Dwight A. Symmes, president, Glenn Falls Portland Cement Co., Glens Falls, N. Y.; Waldo E. Tyler, president, Dewey Portland Cement Co., Kansas City, Mo.; and Frank B. Warren, president, Bessemer Limestone and Cement Co., Youngstown, Ohio.

Mr. Hummel has a distinguished background of service in PCA activities. He was first elected to the board of directors in 1941, and has served continuously as a director to the present. He also served six times on the executive committee of PCA. Mr. Hummel was elected chairman of the Lone Star Cement Corp. last year after serving for almost 11 years as president of that organization.

The retiring directors were: Thomas J. Harte, president, North American Cement Corp., New York, N. Y.; Eugene D. Hill, president, Louisville Cement Co., Louisville, Ky.; R. D. Raff, president, Diamond Portland Cement Co., Middle Branch, Ohio; Charles E. Shearer, president, Keystone Portland Cement Co., Philadelphia, Pa.; and Walter H. Wulf, president, Monarch Cement Co., Humboldt, Kan.

Sixth Pan American Road Congress

The Sixth Pan American Highway Congress, sponsored by the American Road Builders' Assn. in cooperation with Western Hemisphere engineers and the Venezuelan government, will be held in Caracas, Venezuela, July 11-21, 1954. An organization committee of outstanding engineers with national and international backgrounds, headed by Dr. Eduardo Arnal, president, Society of Engineers in Venezuela, has been established for working out organizational details of the congress.

Delegates will attend technical sessions and will have an opportunity to attend colorful tours of Venezuela, the Andes mountains, and the Amazon river areas.

Cummings re-elected vice-president

A. E. Cummings, director of research, Raymond Concrete Pile Co., New York, N. Y., was re-elected vice-president at the Third International Conference on Soil Mechanics and Foundation Engineering held in Zurich, Switzerland.

Rust Engineering Co. builds silos with sliding forms

Three batch plant silos have been completed for Westinghouse Electric Corp. at its Lake Catherine, Ark., plant by Rust Engineering Co. under contract with Frazier-Simplex, Inc.

The reinforced concrete silos, 60 ft high and 30 ft in diameter, have walls 7 in. thick which were constructed in five days using sliding forms.

Protex*

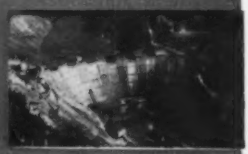
*T M Reg.

And Here's Why!

Scientifically formulated and processed from controlled raw materials under exacting Laboratory control to do a positive job of controlling the entrained air in a concrete mix at a minimum cost. Our leading Industrial Organization's Research and Control facilities is producing a superior Air Entraining Agent FOR ALL TYPES OF CONCRETE. That's the reason for the BIG SWING to PROTEX in the millions of yards of placed concrete Around the World.

This monumental tribute in concrete stands like a beacon of positive proof that PROTEX quality and reliability—coupled with honest dealings and fair prices is what the user wants. Let your PROTEX Representative give you all the facts, and experience your savings with Superior PROTEX.

Fuji Bank Building, Tokyo, Japan. Economy in this new bank building was realized in initial cost and time—and appearance was permanently improved with Protex concrete.



Hungry Horse Dam, Mont. Over 3 million cu. yds. of Protex concrete, selected for its consistent controlled air quality and proven economy, with no yield loss in placed concrete. Comparative tests at the project proved that, regardless of claims or names, none were as effective as PROTEX.

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1331 WEST EVANS AVENUE

DENVER, COLORADO

*T M Reg.

AUTOLENE LUBRICANTS CO.,
Industrial & Research Division
1331 West Evans Ave., Denver 9, Colo.

Please send free booklet, "Facts on Modern Placement of Concrete Through Air Entrainment."

*Firm Name*_____

*Attn. of*_____

*Address*_____

*City*_____ *State*_____

LOOKING AHEAD

January 17-21, 1954—Annual Convention and Exposition, National Assn. of Home Builders, Conrad Hilton Hotel, Chicago, Ill.

January 25-28, 1954—Plant Maintenance and Engineering Show, International Amphitheatre, Chicago, Ill.

January 28-29, 1954 — Canadian Conference on Prestressed Concrete, University of Toronto, Toronto, Ont., Canada

February 1-5, 1954—Spring Committee Week, American Society for Testing Materials, Shoreham Hotel, Washington, D. C.

February 3-5, 1954—California Street and Highway Conference, University of California, Los Angeles, Calif.

February 7-10, 1954—34th Annual Convention, National Concrete Masonry Assn., Shoreham Hotel, Washington, D. C.

February 15-19, 1954—38th Annual Convention, National Sand and Gravel Assn., Conrad Hilton Hotel, Chicago, Ill.

February 15-19, 1954—24th Annual Convention, National Ready Mixed Concrete Assn., Conrad Hilton Hotel, Chicago, Ill.

February 15-19, 1954—Atlanta Convention, American Society of Civil Engineers, Hotel Biltmore, Atlanta, Ga.

February 19-20, 1954—Spring Meeting, National Society of Professional Engineers, Hilton Hotel, Albuquerque, N. M.

February 22-24, 1954—37th Annual Convention, National Crushed Stone Assn., Conrad Hilton Hotel, Chicago, Ill.

February 22-25, 1954—Golden Anniversary Convention, American Concrete Institute, Shirley-Savoy Hotel, Denver, Colo.

February 24, 1954—4th Annual Convention, American Concrete Agricultural Pipe Assn., Fairmont Hotel, San Francisco, Calif.

February 25-27—46th Annual Convention, American Concrete Pipe Assn., Fairmont Hotel, San Francisco, Calif.

July 11-21, 1954—Sixth Pan American Road Congress, American Road Builders' Assn., Pan American Division, in cooperation with the Venezuelan government and Western Hemisphere engineers, Caracas, Venezuela

Zonolite opens new plants

Vermiculite processing plants in Ellwood City, Pa., and North Billerica, Mass., have been acquired by Zonolite Co., in addition to the opening of a vermiculite processing plant in St. Thomas, Ont., Canada, by F. Hyde & Co., Ltd., processing distributor of Zonolite products. These installations bring to 41 the number of processing plants in the United States and Canada operated by Zonolite and affiliated companies.

Errata

The following correction should be made in "Stirrup Design in Beams," ACI JOURNAL, June, 1953.

p. 959—the equation for c should read

$$c = \frac{0.343}{A_v} = \frac{0.343}{0.22} \times \frac{1}{12} = 0.13$$

PLASTIMENT*
CONCRETE DENSIFIER

CONTROLS SET AND REDUCES WATER CONTENT WITHOUT INCREASING AIR CONTENT FOR

- **GREATER UNIFORMITY**
- **CRACK RESISTANCE**
- **WATER-TIGHTNESS**
- **SURFACE HARDNESS**

*Plastiment consistently produces higher structural values in concrete because it limits and controls the growth of water-consuming cement gels during mixing and placing of concrete. This action reduces the water-cement ratio and retards the set of all concretes, plain or air-entrained, regardless of type of cement or aggregate. Uniformity of set and water content (the governing factors of uniform concrete quality) are made possible by changing Plastiment proportions with concrete-placing-temperatures and field conditions.

Controlled set and uniformly low water content — exclusive with Plastiment — means less segregation, shrinkage, cold joints and other defects, greater uniformity and resistance to abrasion, cracking and leakage.

Write for your copy of "Plastiment, Concrete Densifier." For specific information on how Plastiment can benefit your own concrete projects, check with our engineering staff today.

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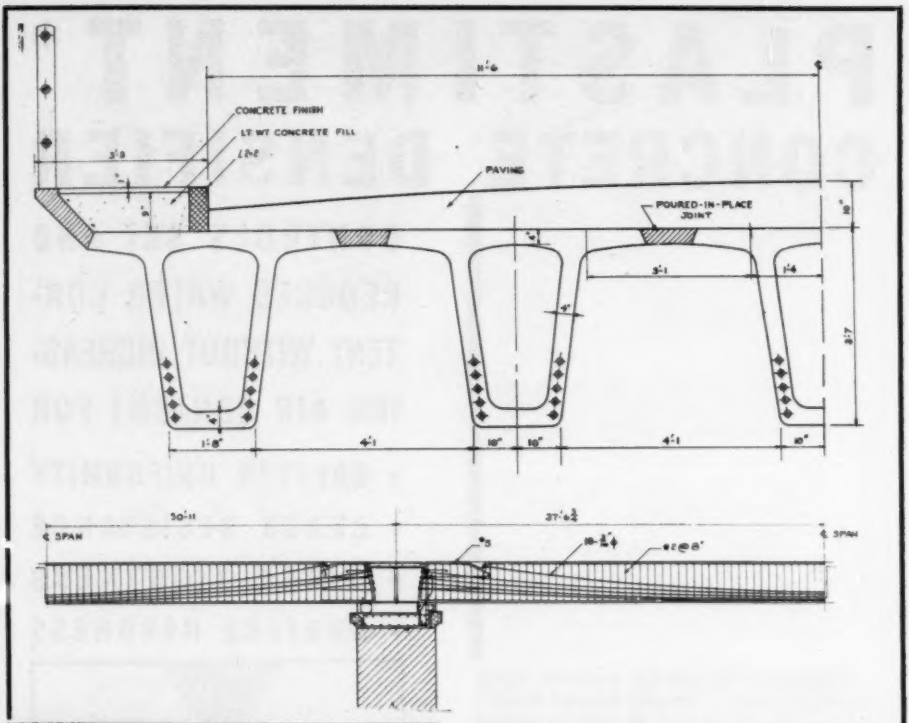
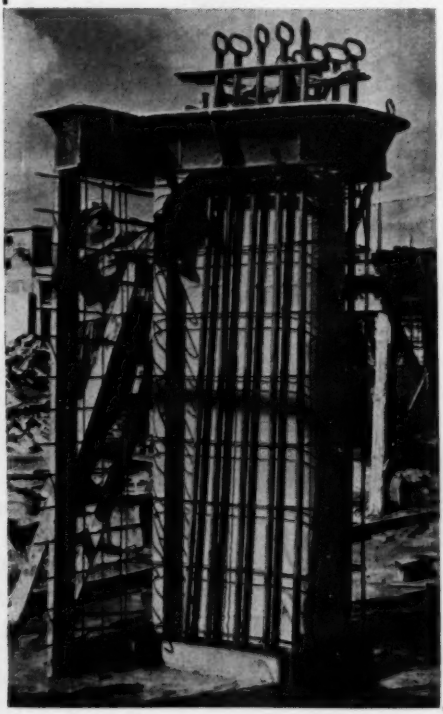




For Prestressed Bridges... One Vacuum Form Makes Nine Precast Bridge Elements Each Day

Hollow sections, 11 ft long, are cast upright in Vacuum Processing forms which are stripped 20 minutes after pouring. With one form, 950 elements for 1500 ft of bridge can be produced in 110 working days.

The project consists of two bridges, total length of 1520 ft, Taormina, Sicily. The contractor is "Ferrocemento," Rome.

●

Vacuum Concrete, Inc.

4210 Samson St. **Phila. 4, Penn.**

Problems and Practices

First of a series relating to "down-to-earth, everyday" concrete problems. This series, presented in question and answer form, will attempt to give brief answers to the more common (and sometimes uncommon, too) questions asked about concrete design and construction practices.

To some, the answers will seem simple and obvious; others may prove to be extremely controversial.

All ACI members are invited to participate —either by submitting an inquiry, or even better, by telling JOURNAL *readers how an intriguing problem was solved. It may well be that readers will be able to suggest more practical solutions to inquiries than those presented.*

Q. What is the best method of sidewalk construction?

A. A 1-in. sand cushion underneath the concrete, plus reasonably dry concrete compacted carefully, and a broom or wood float finish on the surface with proper curing, represents the best method as we know it today.

Walks are usually built 4 in. thick except where heavy vehicles are driven over them, in which case the thickness should be increased to 6 in. One-course construction, that is, placement of the full 4 in. or 6 in. thickness of concrete in one operation, is the usual practice today although many two-course walks 30 or more years old are still serviceable. Expansion joints are generally provided at varying intervals depending upon specifications.

The concrete mix should be rather stiff so that some tamping and spading are required in placing. After striking off the concrete flush with the top of the forms, the concrete is allowed to harden until it becomes quite stiff, then finished with a wood float. Edges of the walk are rounded by working an edging tool along the side forms. The edging tool or a combination edger and groover is also used to finish the joints across the walk.

An interesting description of surface treated, exposed aggregate sidewalks was presented by Louis F. Dieterich in "Construction of Sidewalks in the Extension of the U. S. Capitol Grounds" (ACI JOURNAL, May 1932, *Proc.* V. 28, pp. 627-632). There were two classes of work, one having gravel, the other granite chips as the coarse aggregate in the topping. All the walks were built on top of 4 in. of gravel fill, along the outer edges of which had been poured a 1:3 cement-sand grout to prevent the gravel from running out from under the concrete slab. Entire thickness of the concrete with a gravel surface was 5 in. while that with the finish of exposed granite was 6 in. Expansion joints were provided at approximately 24-ft intervals.

Steel wire mesh reinforcement was placed approximately 2 in. from the bottom of the concrete slab in all walks under 12 ft wide. Where a width of 12 ft was exceeded, the same area of steel reinforcing was provided in two directions.

For the exposed aggregate effect, specifications permitted either the use of a chemical retarder, applied to the surface of the walks, or the mechanical process of brushing and acid washing. The contractor chose the latter method.

It is also interesting to note that the old ACI Standard, "Standard Specifications for Portland Cement Concrete Sidewalks (Serial Designation C-2B-25)," (*ACI Proceedings*, V. 21, 1925, pp. 591-595), which has since been rescinded as being out-of-date, contains many recommendations that are still applicable today.

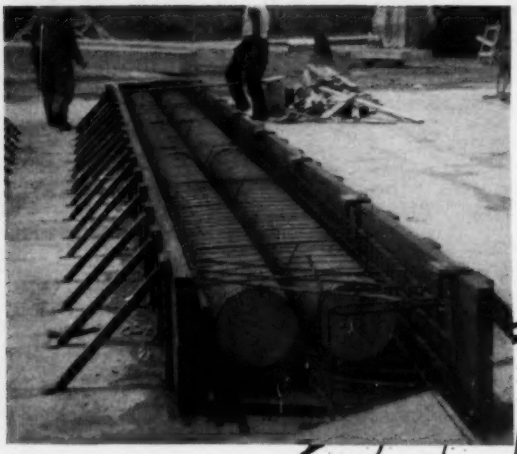
First massive reinforced concrete structure commemorated

On Nov. 14, 1953, the Harvard Engineering Society unveiled a plaque commemorating the 50th anniversary of the dedication of the Harvard Stadium. This structure was not only the first massive reinforced concrete project, but also the first permanent arena for American college athletics.

Reference to engineering literature of the time reveals that Harvard Stadium represented a tremendous contribution to the construction industry. The stadium was conceived and executed by the faculty of the engineering school at Harvard as the 25th anniversary gift of the class of 1879, and supplemented by the Harvard Athletic Assn.

Reduce

SLAB WEIGHT



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Stepanian elected honorary board member

Stephen Stepanian, president, Marble Cliff Quarries Co., Columbus, Ohio, has been elected an honorary member of the board of directors, National Ready Mixed Concrete Assn., and an honorary life member of the association. Mr. Stepanian, who is also president of Arrowcrete Corp., and vice-president and general manager of Arrow Sand and Gravel Co., is a former president of the association and one of its charter members.

Mr. Stepanian came to the United States from Armenia after being educated at Roberts College in Constantinople. He joined the engineering department of the Jeffrey Manufacturing Co., specializing on equipment for the construction industry. He changed his interests to the sand and gravel and the crushed stone industries, and then to the manufacture of ready-mixed concrete. The idea of the modern truck mixer and mechanical agitator was conceived by Mr. Stepanian and he was the first applicant for a patent covering all essentials of the unit.

Kidde appoints managing engineer

Gerard T. Shannon has been appointed managing engineer for the Industrial Engineering Department of Walter Kidde Constructors, Inc., engineers and builders of New York, N. Y., and Houston, Texas. Mr. Shannon was formerly assistant director, Engineering and Construction Division, U. S. Atomic Energy Commission, New York Operations Office, where he was active in the expansion of AEC processing facilities. He has had extensive and varied experience in plant design, construction, and operation both here and abroad.

Lift-slab project in the East

The RCA Victor Division, Radio Corp. of America, has started construction on a group of office and laboratory buildings in Camden, N. J., which will include the lift-slab method in their construction. This will be one of the first large-scale projects in the East to use this system for erecting roofs and walls. General contractor on the job is Turner Construction Co., and Vincent G. Kling of Philadelphia, Pa., is the architect.

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ASCE honors Ammann and Spofford

Honorary membership in ASCE was conferred on O. H. Ammann and Charles M. Spofford at ASCE's annual meeting last fall.

Mr. Ammann, senior partner, Ammann and Whitney, consulting engineers, New York, N. Y., has been connected with long-span bridge construction in this country since 1904 when he participated in design studies for the Queensboro bridge, New York. From 1912 to 1923 he was principal assistant to Gustave Lindenthal on numerous bridge projects, including the Hell Gate Arch and studies for the Arthur Kill bridges for the Port of New York Authority.

As bridge engineer and chief engineer for the port authority and later as chief engineer, Triboro Bridge Authority, Mr. Ammann took a leading part in design and construction of many bridges built by those agencies, including the George Washington bridge. He also served on the board of engineers for the Golden Gate bridge at San Francisco.

Mr. Spofford has, for nearly 40 years, divided his time between teaching and consulting engineering work. Most of his teaching work was at Massachusetts Institute of Technology, where he graduated in 1893 as a civil engineer. In 1909 he was named professor of civil engineering at MIT, continuing in that capacity until 1940.

In 1914, Mr. Spofford participated in the organization of the consulting firm of Fay, Spofford, and Thorndike, Boston, Mass.

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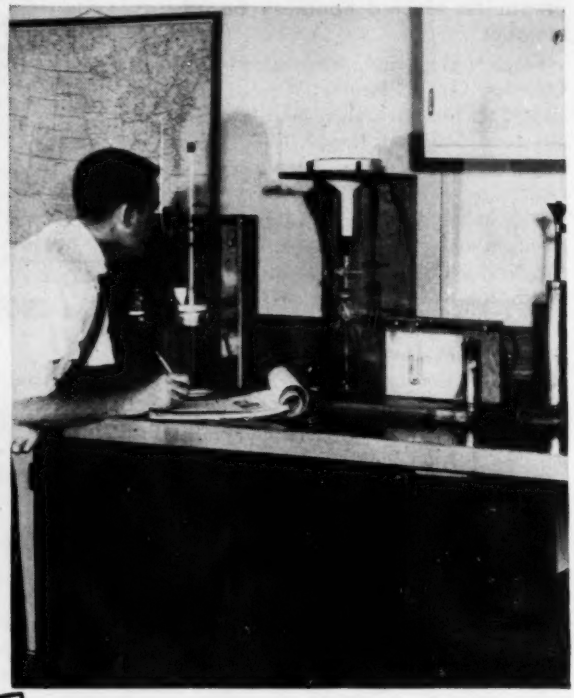

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Who's Who This Month

W. C. Hansen

W. C. Hansen, author of "Effect of Age of Concrete on Its Resistance to Scaling Caused by Using Calcium Chloride for Ice Removal," p. 341, is manager, Research Laboratories, Universal Atlas Cement Co., Buffington, Ind.

From 1924-29 Dr. Hansen served as a member of the Portland Cement Assn. Fellowship staff at the National Bureau of Standards, Washington, D. C., where he conducted research on constituents of portland cement and wrote a number of papers on phase equilibrium in oxide systems.

Dr. Hansen was next associated with the research and production departments of American Cyanimide Co. as research chemist and plant manager, and in 1938 he returned to the Portland Cement Assn. as senior research chemist. In December, 1944, he resigned his PCA position to become manager of the research laboratories of Universal Atlas Cement Co.

In addition to his being an ACI member since 1945, Dr. Hansen is a member of the American Chemical Society, American Assn. for the Advancement of Science, Sigma Xi, Phi Lambda Upsilon, and Gamma Alpha.

H. C. Pfannkuche

"Corrugated Box Forms for Ribbed-Slab Construction," p. 353, is contributed by H. C. Pfannkuche, field structural engineer, Portland Cement Assn., Fort Worth, Texas.

Mr. Pfannkuche received his engineering training at the University of Texas, receiving a degree in architectural engineering in 1926. The first engineering office in which he worked was that of Willard E. Simpson, consulting engineer, San Antonio, Texas. Later he was architect's superintendent and structural engineer under Dr. F. E. Giesecke, at Texas Agricultural and Mechanical College.

After several years as structural engineer in various architectural and engineering offices, he joined the Portland Cement Assn. in September, 1943, as field structural engineer for north Texas. With headquarters in Fort Worth, his territory consists of Fort Worth, Dallas, and east Texas.

Mr. Pfannkuche is a registered professional engineer under the major branch classification of structural engineering.

K. P. Milbradt

K. P. Milbradt, assistant professor and director, Materials Laboratory, Illinois Institute of Technology, Chicago, Ill., writes about "Strap Steel for Prestressed Concrete Structures," p. 357.

Professor Milbradt received a BS degree in mechanical engineering and an MS degree in civil engineering from Illinois Institute of Technology. Upon leaving the U. S. Navy in 1946, he joined the staff of the Department of Civil Engineering, Illinois Institute of Technology, where he has directed projects in the laboratory dealing with residual stresses, prestressed concrete, structural clay products, and elastic buckling of statically indeterminate structures. He has also been consultant to a number of engineering firms in the fields of precast concrete products and experimental stress analyses.

Professor Milbradt has been an ACI member since 1952 and is a member of ACI Committee 115, Research.

George L. Kalousek

Dr. George L. Kalousek, Research Foundation, University of Toledo, Toledo, Ohio, presents another JOURNAL paper, "Studies on the Cementitious Phases of Autoclaved Concrete Products Made of Different Raw Materials," p. 365.

Dr. Kalousek, in addition to being project director of studies on concrete at the University of Toledo, is employed in the Research Division, Owens-Illinois Glass Co. He graduated from the University of Idaho in 1930 with a BS in chemical engineering, and received MS and PhD degrees in chemistry in 1936 and 1941, respectively, from the University of Maryland.

From 1930-44, Dr. Kalousek was engaged in research on the physical and chemical properties of cements and concrete at the National Bureau of Standards.

Continued on p. 19

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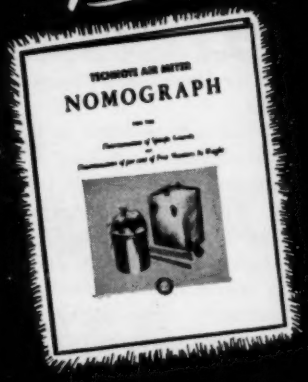

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Who's Who

Continued from p. 17

R. E. Davis and G. E. Troxell

"Properties of Concrete and Their Influence on Prestress Design," p. 381, are discussed by R. E. Davis, director emeritus, Engineering Materials Laboratory, and G. E. Troxell, professor of civil engineering, both of the University of California, Berkeley, Calif.

Professor Davis, past president of the Institute, author or co-author of more than a dozen ACI papers, twice a Wason Medalist (1931, 1934) and winner of the Construction Practice Award (1948) scarcely needs a lengthy introduction to JOURNAL readers.

Graduating from the University of Maine in 1911, Professor Davis taught for seven years at the University of Illinois, receiving his MS degree in 1916. After a year as associate professor of civil engineering at the University of Nebraska he joined the staff of the University of California in 1920.

Besides his ACI membership which dates back to 1926, Professor Davis is a member of ASCE, ASTM, Sigma Xi, Tau Beta Pi, Chi Epsilon, Delta Sigma Chi, and a fellow of the American Assn. for the Advancement of Science.

Professor Troxell, after graduation from the University of California in 1918, spent one year in the Corps of Engineer, U. S. Army, and one year on bridge construction for the California Division of Highways.

He has been on the staff of the Division of Civil Engineering at the University of California since 1920. During this time he has been closely associated with many large-scale research projects on cement and concrete conducted there in the engineering materials laboratory, and has been in charge of the design of several reinforced concrete buildings in the San Francisco Bay area.

Professor Troxell, an ACI member since 1929, has served on various ACI committees and currently is ACI representative on the American Standards Assn. Committee A2, Fire Tests.

California road conference

The California Street and Highway Conference for 1954 will be held at the University of California, Los Angeles, Calif., February 3-5.

Radioactive concrete block?

"Stranger than fiction" are some of the proposals now being made by scientists to dispose of radioactive wastes from nuclear reactors. It may be that concrete block will play an important part in the solution of this problem, reported the November, 1953, issue of *Industrial Bulletin* published by Arthur D. Little, Inc.

Controls for the disposal of the relatively low-level activity from the average research and medical radioisotope user are working well. The big problem, reports the bulletin, would come when nuclear reactors come into use in the power and chemical industries, because these atomic furnaces or "piles" would accumulate relatively large amounts of radioactive wastes. Although the physical mass of the waste products would be small in terms of normal waste disposal volumes, the concentrated wastes are toxic for long periods. Concentrating the residues to a small volume is also difficult.

Concentrated liquid wastes from some Atomic Energy Commission reactors are now stored in underground steel tanks. Corrosion will make eventual replacement of the tanks necessary, and sometimes cooling coils are needed to remove the heat generated by radioactive decay. Industrial use of nuclear reactors, said the article, will produce much more waste and require permanent disposal methods, for dangerous levels of activity persist in some cases for generations.

Radioactive concrete mix

While armchair theoreticians would like to shoot "hot" wastes into outer space, where they can contaminate nothing but a space ship, said *Industrial Bulletin*, the general earthbound approach is to immobilize the radioactivity in some durable solid form.

One suggestion offered by the article is that concentrated liquid wastes might be used in place of water in making concrete block. These units could then be buried in an arid spot where they would not introduce excessive radioactivity into ground water, or the block might be dumped into the ocean where they would bury themselves in the muck on the bottom. To avoid transportation problems, it would be better to bury the block near the producing site. In this event, cautions the article, care would have to be taken to insure that hazardous amounts of radioactivity were not added to the local water supply.

The AEC is actively studying possibilities for the use and disposal of radioactive wastes, but no conclusions are yet generally accepted. It may quite well be that radioactive concrete block will prove to be the answer.

Tobin changes positions

Robert E. Tobin has resigned as district engineer of the Spokane, Wash., office of the Portland Cement Assn., to accept a position as engineering consultant for the Spokane Concrete Pipe Co. Mr. Tobin's duties will involve development of precast and prestressed concrete products.

Reviewers needed

Revista del Colegio de Ingenieros de Venezuela

This Venezuelan technical periodical is now being received regularly at Institute headquarters. A volunteer reviewer is needed to keep Members informed of pertinent papers in this publication through the "Current Reviews" section of the JOURNAL. Those interested please write the Secretary.

Gradbeni Vestnik

This Yugoslavian technical periodical is now being received regularly at Institute headquarters. A volunteer reviewer is needed to keep Members informed of pertinent papers in this publication through the "Current Reviews" section of the JOURNAL. Those interested please write the Secretary.

Zement-Kalk-Gips

This German technical periodical is now being received regularly at Institute headquarters. A volunteer reviewer is needed to keep Members informed of pertinent papers in this publication through the "Current Reviews" section of the JOURNAL. Those interested please write the Secretary.

New Members

The Board of Direction approved 54 Individual applications, 5 Corporations, 13 Juniors, and 13 Students making a total of 85 new members. Considering losses due to resignations, deaths, and nonpayment of dues, the total membership for the month of November is 6333.

Individual

ANDERSON, JOHN A., Jacksonville, Fla. (Chf. Struct. Engr., Smith & Gillespie, Engrs.)
BARNARD, PAUL F., Ames, Iowa (Struct. Engr., Iowa Highway Comm.)
BONELL, JOHN A., Reno, Nev. (Assoc. Prof., of Civil Engrg., Univ. of Nevada)
BANOS, OSCAR PACHECO, San Salvador, El Salvador, C. A. (Civil Engr., Div. of Pub. Water Works)
BRAY, EVERETT A., Thayne, Wyo. (Concrete Plant Supt., Palisades Contractors, Palisades, Idaho)
CASTIGLIA, ENRICO, Palermo, Sicily (Civil Engr., Prof. of Science of Bldgs., Engrg. School of Palermo)
CHRISTIAN, J. L., Greensboro, N. C. (Struct. Engr.)
CRANDALL, PAUL S., Cambridge, Mass. (Pres., Crandall Dry Dock Engineers, Inc.)
DAY, CLARE HENRY, Redlands, Calif. (Architect)
DE DIEGO, OSCAR, Caracas, Venezuela (Struct. Engr., Corporacion Venezolana de Fomento)
DICKEY, HERBERT E., Golden, Colo. (Matl. Engr., USBR)
DONATELLI, JAMES V., Pittsburgh, Pa. (Spec. in Steel & Concrete Structures)
GALAN, MIGUEL I., Bogota, Colombia, S. A. (Civil Engr., Dept. of Public Works, Municipality of Bogota)
GERHART, RICHARD L., Reading, Pa. (Asst. Struct. Engr., Gilbert Assocs.)
GRISWOLD, EDGAR A., San Marino, Calif. (Gen. Contr. & Struct. Engr.)
HERAK, DONALD H., Spokane, Wash. (District Engr., PCA, Chicago, Ill.)
ING, GLYN T. H., Taipei, Taiwan, China (General Mgr., Continental Engineering Corp.)
LAFLAMME, WILLIAM D., North Hull, Que., Canada (Mgr., Sec., Treas., W. D. Laflamme, Ltd.)
LESTER, J. A., Queenston, Ont., Canada (Supv. Inspector, Hydro-Electric Power Comm. of Ontario)
LEWIS, J. S., JR., Goldsboro, N. C. (Pres., Lewis & Bowman, Inc.)
LEWIS, THOMAS EDWARD, Frankston, Australia (Snowy Mountains Hydro-Electric Authority, Cooma, N. S. W., Australia)
LOVE, THOMAS W., Fort Worth, Texas (Civil Engr., Corps. of Engrs.)
MANRIQUE, FRANCISCO C., Bogota, Colombia (Constr. Engr., Preload Co., New York, N. Y.)
MAPLES, JOHN M., Cleveland, Ohio (Struct. Engr., H. K. Ferguson)
MATSUOKA, KEI, Sapporo, Japan (Hokkaido Hume Pipe Mfg. Co., Ltd.)
MCCABE, ROBERT THOMAS, Aurora, Colo. (Sales & Service Work, Ready-Mixed Concrete Co.)
MEHNDIRATTA, MAHENDRA RAJ, Chandigarh, India (Asst. Engr., Designs, Public Works Dept.)
MICKLEBOROUGH, K. F., Ottawa, Ont., Canada (Asst. Director, Canal Services, Dept. of Transport)
MOCABEE, DAVID A., Long Beach, Calif. (Jr. Engr., Moffatt & Nichol, Inc.)
MORRIS, ROBERT L., San Francisco, Calif. (Cons. Struct. Engr.)
MUNRO, DONALD G., Public Works Dept., Perth, West Australia (Hydraulic Engr.)
NOLL, ELMER S., JR., Allentown, Pa. (Supt. of Plants, Sheesley Supply Co., Inc.)
OLDHAM, JOHN E., Allentown, Pa. (Asst. Civil Engr., Pennsylvania Power & Light Co.)
PAINE, STEPHEN M., Idaho Falls, Idaho (Project Mgr. & Res. Engr., Aircraft Nuclear Propulsion Project, Atomic Energy Comm., Los Angeles, Calif.)
PAZ, FRANK X., Los Angeles, Calif. (Reinforced Concrete Inspection & Field Tests, Raymond G. Osborne Labs.)
PERIMUTTER, JACK H., Denver, Colo. (Pres., Prestressed Concrete of Colorado)
PETERSON, T. H., Oakland, Calif. (Pres., Indecnol Engrs., Inc.)
PHILLIPS, ALBIN J., Palisades, Idaho (Inspector, USBR)
PORTER, LELAND C., Denver, Colo. (Matls. Engr., USBR)
PULICE, DOMENIC J., New York N. Y. (Engr., Buck, Seifert & Jost)
RICKERT, ADAM J., Milwaukee, Wis. (Distr. Mgr., Pittsburgh Testing Lab.)
ROESSER, KARL, Milwaukee, Wis. (Struct. Engr., PCA)
SETTOON, W. B., New Orleans, La. (Chf. Struct. Engr., Curtis & Davis)
SHELTON, W. S., Como, Western Australia (Supv., Design, Public Works Dept., Perth, W. Australia)
STEIN, LEON, Los Angeles, Calif. (Sr. Struct. Engr., State of Calif., Div. of Arch.)
TAYLOR, ROBERT JOHN, Vancouver, B. C., Canada (Civil Constr. Engr., B. C. International Engineering Co., Ltd.)
TEIXEIRA, DONALD M., Palo Alto, Calif. (Struct. Engr., John A. Blume)
THIBODEAUX, MURPHY H., Bellaire, Texas (Asst. Prof. of Civil Engrg., Rice Institute)
TIMMS, R. H., Welland, Ont., Canada (Vice-Pres., R. Timms Construction & Engineering, Ltd.)
WALLIS, H. P., Westmont, Canada (Salesman, Metallicrete Floor Co., Ltd.)
WALTERS, E. E., Dallas, Texas (Struct. Engr.)
WEST, PAUL H., South Bend, Ind. (Civil Engr., Wm. S. Moore)
WESTBY, S. H., Chicago, Ill. (Mgr. of Housing & Cement Prod. Bureau, PCA)
WILLIAMSON, WALTER DOUGLAS, Dunedin, New Zealand (Civil Engr., Struct. & Mining Contr., Downer & Co., Ltd.)

Junior

CELIS, ANTONIO J., Ithaca, N. Y.
CROSIER, T. A., St. Boniface, Man., Canada (Engr., Supercrete, Ltd.)
D'ESCRIVAN, ERNESTO GUARDIA, Caracas, Venezuela (Engr., Instituto Nacional Obras Sanitarias)
MAURY, GUSTAVO E., Caracas, Venezuela (Cons. Engr., Oficina Tecnica Maury)
MIKHALKIN, BASIL, San Francisco, Calif. (Grad. Student, Univ. of Calif.)
NAVA, ROGER E., Iowa City, Iowa (Grad. Student, Hydraulic, State Univ. of Iowa)
PATEL, SHANTILAL AMBALAL, East Lansing, Mich. (Civil Engr.)
PRESTON, ROBERT E., N. Miami, Fla. (Engr. & Est., Maule Industries, Inc.)
SANTIAGO, GUILLERMO MARTINEZ, Hato Rey, Puerto Rico (Gen. Struct. Design Work, P. R. Ind. Development Co.)
SHAHIN, ASAAD, Cairo, Egypt (Engr., Ministry of Public Works)
SONDHI, JAGDISH R., Mombasa, East Africa (Cons. Civil Engr., & Director, Sondhi Ltd.)
THOMEN, VICTOR A., Dominican Republic, W. I. (Engr., Road Design, Elmhurst Contracting Co.)
VAKIL, R. N., Madison, Wis. (Grad. Civil Engrg., Gujarat Univ., Bombay State, India)

Student

AGUERREVERE, TOMAS, Boston, Mass. (MIT)
ARGUELLO, ROBERTO, Notre Dame, Ind. (Univ. of N. D.)
BHUTA, PRAVIN G., Ann Arbor, Mich. (Univ. of Mich.)
CROCKER, GEORGE D., Stillwater, Okla. (Okla. A&M)
GARCIA, HORACIO PASTORI, Cambridge, Mass. (MIT)

Continued on p. 22

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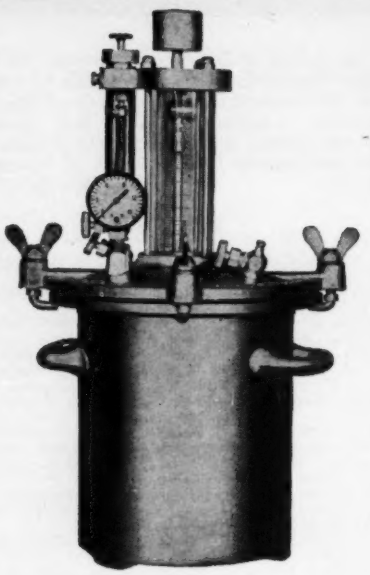

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Turner Construction Co. expands

H. D. Loring, president, Ferro Concrete Construction Co., announced that negotiations have been concluded whereby the Turner Construction Co., New York, N. Y., will acquire a financial interest in Ferro.

In recent years Ferro Co. has constructed many structures in the Cincinnati area, including the following: Glen Meadows housing project and office annex for Western and Southern Life Insurance Co., Miami Valley research laboratories for Procter and Gamble Co., Walter C. Beckjord station of the Cincinnati Gas and Electric Co., McMicken Hall at the University of Cincinnati, Evendale plant for Crosley Division of the Avco Manufacturing Corp., Whitewater plant for Cincinnati Shaper Co., Laidlaw Ave. plant for Westinghouse Electric Corp., dormitories and science buildings for Miami University and Western College for Women, and the Chrysler Airtemp factory at Dayton, Ohio.

Well-known buildings constructed by the Turner Construction Co. include: Mellon-U. S. Steel building in Pittsburgh, Pa., Mutual Life Insurance Co. building in New York, N. Y., Massachusetts Mutual building in Springfield, Mass., and Chrysler building in New York, N. Y.

Buildings now under construction by the Turner Co. include: Appliance Park for General Electric in Louisville, Ky., a newspaper plant for the Bulletin Co. in Philadelphia, Pa., all facilities for the White Pine copper development in northern Michigan, and recently a contract was awarded Turner Co. for the Cramet Co. titanium development at Chattanooga, Tenn.

New Members

Continued from p. 21

HILL, JAMES ROBERT, Minneapolis, Minn. (Univ. of Minn., Design & Field Work, Minder Engrg. Co.)
LAU, FEDERICO LI, Lima, Peru
PELLETIER, ROBERT J., Beverly, Mass. (MIT)
PIMENTA, JOHN MANUEL, S. Bend, Ind. (Univ. N. D.)
PIZANO, VICTOR F., Santiago de los Caballeros, Dominican Republic (Univ. de Santa Domingo)
ROSANIA, BORIS S., Ithaca, N. Y. (Cornell Univ.)
VILLATORO, JOSE SANTOS H., San Salvador, El Salvador (National Univ. of El Salvador)
ZACHMAN, JAMES A., St. Paul, Minn. (Univ. of Minn.

Committee Appointments
Continued from p. 7

Phil M. Ferguson
University of Texas

Committee 318, Standard Building Code

Malcolm S. Douglas
Cleveland Board of Building Standards and Building Appeals
Thor Germundsson
Portland Cement Assn.
Oliver G. Julian
Jackson and Moreland
Paul Rogers
Rogers and Snitoff, Inc.
George Winter
Cornell University

Committee 324, Precast Reinforced Concrete Structures

Arthur R. Anderson
Concrete Engineering Co.

Committee 325, Structural Design of Concrete Pavements for Highways and Airports

Joseph H. Moore
Pennsylvania State College

Committee 326, Shear and Diagonal Tension, Joint ACI-ASCE

R. H. Evans
University of Leeds, England

Committee 609, Compaction of Concrete by Mechanical Means

Henry Comack
New York State Department of Public Works

Committee 711, Precast Floor Systems for Houses

J. H. Appleton
University of Illinois

Committee 716, High Pressure Steam Curing

Dale Cobb
Century Brick Co.
Herbert K. Cook
Waterways Experiment Station
Ralph E. Cromis
Boice Builders Supply
L. G. Randolph
Concrete and Cinder Products
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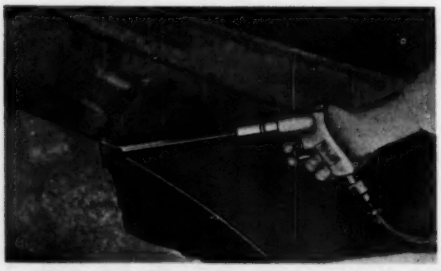
Tools, Materials, Services

Under this heading note will be made from time to time of producer literature of presumed technical interest (and available from its source for the asking) to ACI users of tools, equipment, materials, accessories, and special services.

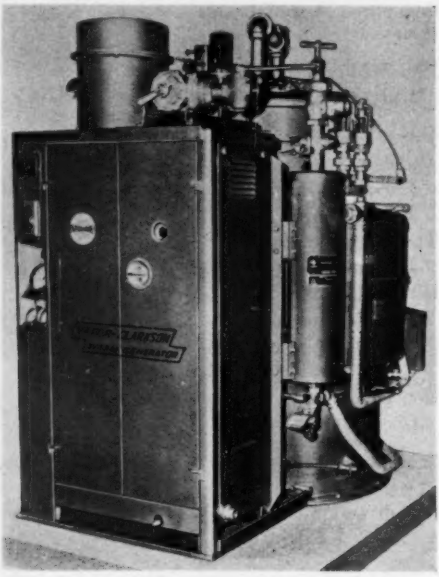
Concrete saw

Two models of concrete cutting saws, the CS-500 and the CS-400, have been announced by the Champion Manufacturing Co. Both models are designed for cutting all types of concrete pavement slabs, and can also be used for cutting joints in concrete flooring and for patching and trenching work. The CS-500 saw is equipped with a 14.6-hp air-cooled gasoline engine, and has dual blade guards with 14-in. blade capacity. The CS-400 is equipped with a 8.4-hp air-cooled gasoline engine with each blade guard having a 12-in. blade capacity. Both machines have dashboard controls, positive screw feed, depth lock, nonsway rubber tire wheels, and other features designed for easy operation and maintenance.—Champion Manufacturing Co., 2028 Washington Ave., St. Louis 3, Mo.



Power tool for concrete cleaning

The Big Bully air hammer, shown during a cleaning operation on a concrete mixer blade, is finding use by concrete products manufacturers and building supply firms. Operations include cleaning mixing equipment, star drilling, cleaning mixing trucks, and chipping waste concrete from mixing room floors. The 28 different tools available to fit this 50-oz. 6-in. air-powered tool enable adaptations to many operations. —Superior Pneumatic and Manufacturing, Inc., 4758 Warner Rd., Cleveland 25, Ohio



Steam generator

Vapor Heating Corp. announces the Vapor-Clarkson steam generator Model OKJ-4740 that can change from fuel oil to natural gas fuel without interrupting steam output. Vapor engineers have incorporated the fuel-oil spray nozzle right into the metal body of the gas burner. When the fuel selection switch is flipped from natural gas to oil, the motorized gas valve closes and the fuel-oil solenoid valve opens, releasing oil under pressure to the spray nozzle. Fuel oil is always ready to be released to the combustion chamber because it is continuously circulated through the steam generator's hydraulic modulating controls. A constant spark and pilot light are said to insure positive lighting.

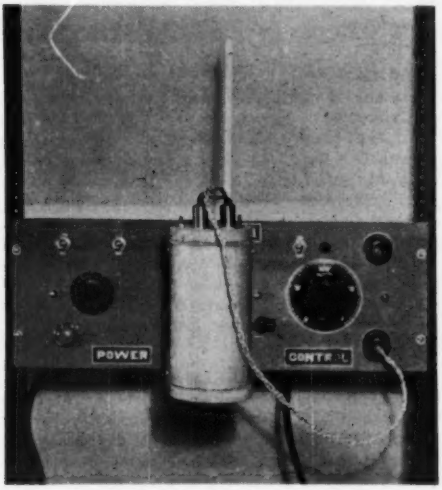
The manufacturer claims this steam generator develops full working steam pressure up to 300 psi in less than 3 min from cold water, and produces 1500 to 5000 lb of steam per hr at over 80 percent efficiency. Steam pressure may be changed from 10 to 300 psi by turning one control. A patented steam separator removes excessive moisture and water treatment particulars from the steam so that 99 percent dry, clean steam is directed through the stop valve to the steam line.

The steam generator is a complete package which includes the 7½-hp electric motor, blower, feed-water pump, steam separator, steel coils, and all the controls in one cabinet. A fork-lift truck can pick up this 6000-lb machine which is about one-fourth the size of a conventional type boiler. No special building or walled-in area is necessary as these units cannot blow up because there is no reservoir of water heated under pressure.

For the construction industry, this machine is said to be suitable for concrete block plants, portable power plants, steam for cranes, pile driving hammers, and concrete curing. Over-all dimensions are 50 in. wide, 80 in. high, and 73 in. long.—Vapor Heating Corp., Dept. PR, 80 East Jackson, Chicago 4, Ill.

Calibration oven

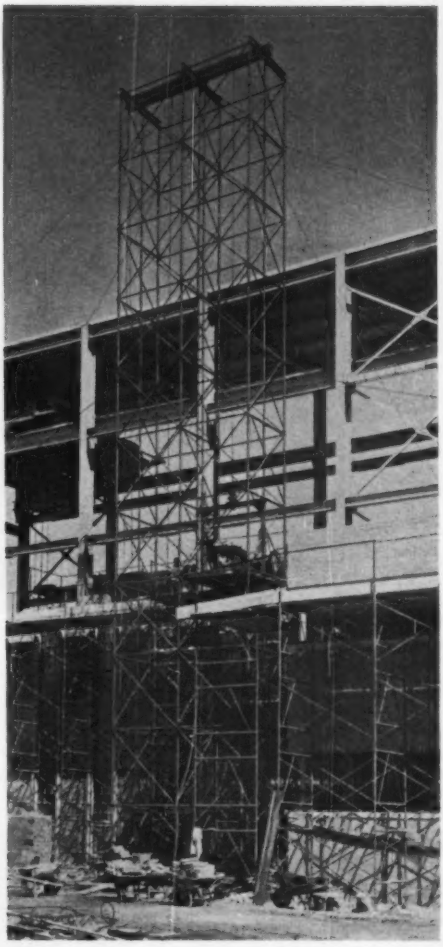
Weiller Instruments Corp. announces the Calibreg-1-Hg-1, a thermostated oven which offers a choice of constant temperatures at the turn of a dial. All components, including oven, are mounted on a 19 x 7-in.



relay rack panel. The oven is 7 in. high, 3½ in. in outside diameter, and has five cavities 0.320 in. in diameter and 5 in. deep for thermometers or thermocouples to be standardized. Accuracy is within 0.01 C and heating is at the rate of 10 C per min; cooling is at the rate of 10 C per 2 min.—Weiller Instruments Corp., 95 Broad St., New York 4, N. Y.

Flexible metal ducts for prestressed construction

Interlocking flexible metal tubing, manufactured by Atlantic Metal Hose Co., Inc., has been announced. In operation, the tubing is fully elongated and cut to a length sufficient to project beyond the forms. Prestressing cables are then inserted into the tubing, which is then positioned in the formwork. Concrete is placed, and after forms are removed the tubing is stripped back to the face of the concrete for the prestressing operation.—Atlantic Metal Hose Co., Inc., 123 West 64th St., New York, N. Y.

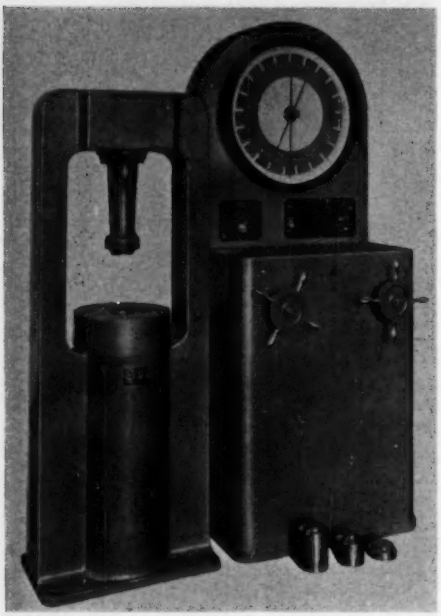


Hoist tower speeds work

A Safway material hoist tower is speeding work on Milwaukee's new incinerator plant. The medium-duty hoist tower, latest in the Safway line, is 68 ft high. The tower has a capacity of 3100 lb per hoist, and lifting speed is 160 ft per min. Safway towers are available in two types ranging from 2000 lb and a maximum height of 150 ft for the light-duty to 3100 lb and a maximum height of 200 ft for the heavy-duty tower.—Safway Steel Products, 6234 W. State St., Milwaukee 13, Wis.

Drain pipes

Walker Cement Products Co. has released a four-page bulletin entitled "Poroswall Drain Pipes" describing its line of underdrain pipe. Features claimed by the manufacturer include drainage through the porous wall structure of the pipe, and a self-sealing slip joint which does not require wrapping or mortar. —Poroswall Pipe Division, Walker Cement Products Co., Little Ferry, N. J.



Compression testing machine

A 50,000-lb cement tester for plastic mortar cubes, cylinders, and beams is announced by Baldwin-Lima-Hamilton Corp. The testing machine was designed to meet requirements of ASTM Designation C 109-52, and utilizes a null-balance Tate-Emery indicator operated by an Emery hydraulic cell in the loading unit and a servo-motor. Indicator dial is 24 in. in diameter with three full-scale ranges of 0-5000, 0-20,000, and 0-50,000 lb.

Emery capsule and loading frame have a load capacity of 100,000 lb which can be used by connecting a 16-in. Emery precision load dial, available as extra equipment, into the manifold of the Tate-Emery indicator. Accuracy is within 0.5 percent of dial reading or 0.1 percent of range capacity, whichever is greater. Improvements in load pacing are said to be provided by steplessly variable speeds and a speed indicator on the dial. Speeds may be varied from dial capacity per minute down to 5 percent of dial capacity per minute.

Without the removable top strut in which the ball seat of the spherical block is pivoted, maximum vertical opening is 21¾ in. Clearance between columns is 17⅝ in. The machine has an 11 in. diameter ram with a 3-in. stroke. Bulletin 4205 describes the evolution, features, and specifications of the machine. —Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.

Block machine

The Stearns Model 50-3 concrete block machine has been announced in a three-at-a-time size with a 18½ x 26-in. plain-steel pallet. The machine is available as a complete package—block machine, standard attachment, automatic pallet return, and magnetic pickup off-bearing hoist.—Stearns Manufacturing Co., 600 E. Beecher St., Adrian, Mich.

Materials handling

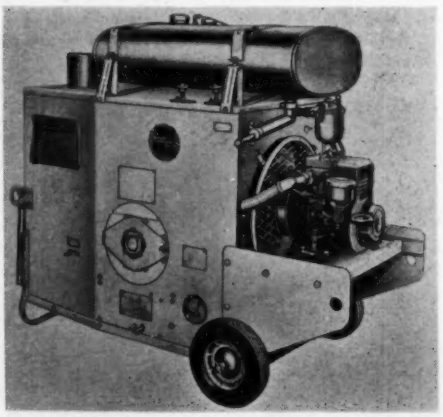
Bulletin No. 122-J describing the Model J Vibrex vibrating screen has been released by Hewitt-Robins, Inc. The screen is especially recommended for use in small quarries, roadside contractor's plants, cinder block plants, and building construction jobs.—Hewitt-Robins, Inc., 666 Glenbrook Rd., Stamford, Conn.

Tilt-up wall brace

Designed for fast and efficient bracing, adjusting, and plumbing of precast concrete wall panels, a new tilt-up wall brace is made of lightweight tubing and is adjustable from 12 to 22 ft. It has two types of standard end fittings; one type is a quick attach unit, designed for a ball and socket attachment with the ball furnished with the brace. The other end fitting is interchangeable and can be used with all standard imbedded inserts. A special bulletin describing this brace and other equipment especially designed for tilt-up, precast concrete operations is available.—F. Thomas Collins and Associates, Box 208, San Gabriel, Calif.

Silicone products

Dow Corning Corp. has released "Silicone Products," a 1953-54 reference guide to its line of these materials. A cross-reference application index lists and describes silicone products which include adhesives, lubricants, protective coatings, and water repellents. The guide includes descriptions and uses of each type of silicone product.—Dow Corning Corp., Midland, Mich.



Portable heater

A redesigned standard model Herman Nelson portable air heater has been announced by American Air Filter Co., Inc. The improved model is powered with a Briggs and Stratton Model 6 engine. Use of this engine has permitted modifications in engine mounting resulting in a simpler, cleaner arrangement of components at the air intake end of the heater. A new addition is a fuel metering valve which can reduce the capacity of the unit from its maximum of 385,000 Btu per hr to a low of 100,000 Btu per hr, which results in fuel savings at frequently desired lower outputs.—Portable Heater Sales, American Air Filter Co., Inc., Moline, Ill.

Membership in the American Concrete Institute

To facilitate prospective members in joining the Institute, membership application forms are provided. Present Members may aid by bringing these forms to the attention of those who may profit from membership advantages. The grades of membership are described overleaf.

All who have an interest in concrete and a desire to improve it through a nonprofit educational service in gathering, correlating, and disseminating information on design, construction, manufacture, use, and maintenance of concrete structures and products are eligible for Institute membership.

There are many opportunities in the Institute for technical committee activity, contributions from your experience in technical papers and the briefer "Letters from Readers" section, and in reviewing technical literature. Thus you can help further ACI's aim "to provide a comradeship in finding the best ways to do concrete work of all kinds and in spreading that knowledge," and at the same time benefit from the experiences of other Members.

(cut here)

Board of Direction, American Concrete Institute
18263 W. McNichols Road
Detroit 19, Michigan

Date_____

Individual Members, North America and U. S. Possessions	**$15.00**
Individual Members elsewhere	**12.00**
Corporation Members	**50.00**
Contributing Members	**100.00**
Junior Members—nonvoting (under 28)	**7.50**
Student Members—nonvoting (under 28)	**5.00**

(Subject to stipulations of Bylaws—Article I on reverse side. Bylaws on request.)

Of the annual dues, $12.00 is for the JOURNAL of the American Concrete Institute (except that dues for Junior and Student Members apply in full for the JOURNAL).

The undersigned hereby applies for_____**membership**
(Individual, Corporation, Contributing, Junior, Student)

in the American Concrete Institute. Proposed by_____

For Corporation Membership, ACI representative will be_____

_____ _____
(Date of graduation if Student) (Name, if Corporation)

Signature_____

For our records, please complete both sides of application.

EXCERPTS FROM BYLAWS: ARTICLE I—MEMBERS

Section 1. This Institute shall consist of Members, Corporation Members, Contributing Members, Junior Members, Student Members and Honorary Members interested in furthering the Institute's objects as set forth in its Charter.

Sec. 2. A Member shall be an individual.

A Corporation Member shall be a firm, corporation, society, agency of government or other organization. A Corporation Member shall name one individual as its representative who will enjoy all membership rights and privileges.

A Contributing Member shall be an individual, firm, corporation, society, agency of government or other organization wishing to give larger support to Institute activities through the payment of larger dues. Contributing Members, other than individuals, shall name representatives as do Corporation Members.

A Junior Member shall be a person less than 28 years old.

A Student Member shall be less than 28 years old and a student in residence at a recognized technical or engineering school.

An Honorary Member shall be a person of eminence in the field of the Institute's interest, or one who has performed extraordinarily meritorious service to the Institute.

Sec. 3. All classes of Members except Honorary Members and Student Members, shall be proposed by at least one Member of the Institute and elected by a two-thirds vote of the Board of Direction. An Honorary Member shall be elected by unanimous vote of the Board of Direction. A Student Member shall be proposed by a member of his school's faculty, who need not be a Member of the Institute, and elected by a two-thirds vote of the Board of Direction.

Sec. 4. All Members shall have all rights and privileges of membership as determined by the Board of Direction except that a Junior or Student Member shall not vote nor hold office. The status of a Student Member shall change automatically to that of Junior Member on the first anniversay of his membership succeeding the date on which he ceases to be a student in residence. The status of a Junior Member shall be changed to that of Member on the first anniversary of his membership after he becomes 28 years of age.

Sec. 5. Applications for and resignations from Membership and requests for change of representatives of Corporation or Contributing Memberships shall be presented in writing to the Secretary-Treasurer. Resignations may be accepted only from Members whose dues are not more than 60 days in arrears, except by special action of the Board of Direction.

(cut here)

Name _____
Please Print

Date of Birth _____
Month Day Year

Title or Position _____

Name of Firm or Organization _____

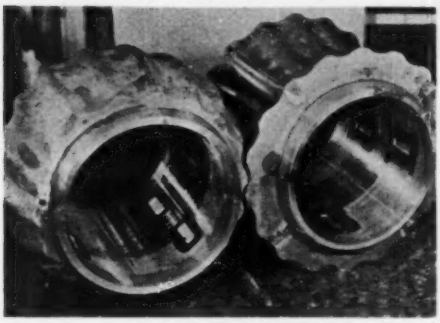
☐ **Business Address** _____

☐ **Resident Address** _____
(Please check address to which you wish mail and publications sent)

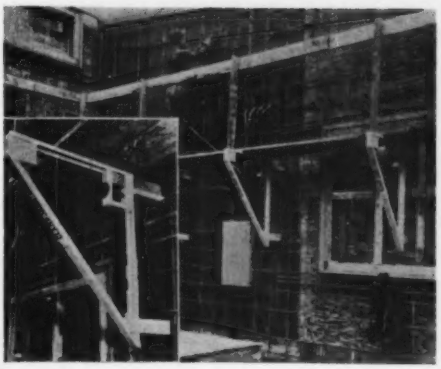
Nature of Firm's Business _____

Rock crusher

Corrugated, concave and convex rollers for crushing rock are embodied in the Latture Roto-Crusher. These rotors move in opposite directions, are independently driven, and are accurately timed, so that the corrugations are in constant mesh, thus preventing slippage and virtually eliminating flat or elongated particles. The result of this construction is that rock is forced through the rotors at their peripheral speed, thus the capacity is said to be increased over that of crushers depending upon gravity flow.



Spacing between rotors can be maintained as desired from contact to 6 in. through use of a hydraulic system which includes an accumulator containing both oil and gas; the oil to assure positive pressure between the rotors, and the gas to allow sufficient compression to permit the passage of tramp iron. The machine is said to be capable of producing ½-in. material at the rate of 100 tons per hr, with an approximate reduction of four to one.—Waldrip Sales Co, 11810 Center St., Hollydale, Calif.



Scaffolding bracket

Continental Scaffolding Co. has announced a scaffolding bracket called Clamp-Jack which is designed particularly for concrete construction work including: erection of first and second form walls, placing of reinforcing steel, stripping of forms, breaking off ties, patching, sacking, and finishing the surface. Clamp-Jacks are secured in place by hooking over or through the walers, or by a form clamp and standoffs on the inner surface of the first form wall when placing reinforcing steel. They are not limited to use on walers; however, after the first section has been placed and stripped, the form clamp may be attached to a J-bolt or deformed inner rod left imbedded in the concrete. Provisions are built in for use of standoffs and handrail support. Additional features include lightweight (22 lb) and ease of stacking. There are no projections and 50 of the brackets can be stored in a space less than 4 ft square and 5 ft high.—Continental Scaffolding Co., Box 2551, Sacramento, Calif.

DISCUSSION

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Sept. Jl. '53

Minimum Standard Requirements for Precast Concrete Floor Units—Committee 711

Concrete for Radiation Shielding—Edwin J. Callan

Absorption by Concrete of X-Rays and Gamma Rays—B. E. Foster

Effect of Sustained Overload on the Strength and Plastic Flow of Reinforced Concrete Beams—G. W. Washa and P. G. Fluck

Economical Design of Prestressed Concrete Beams—David P. Billington

Discussion closes February 1, 1954

Oct. Jl. '53

Proposed Recommended Practice for Selecting Proportions for Concrete—Committee 613

Development of a Cell for the Installation of Electrical Resistance Strain Gages—Herbert E. Worley and Richard C. Meyer

Failure of Concrete under Combined Tensile and Compressive Stresses—Gerald M. Smith

Correlation Between Laboratory Accelerated Freezing and Thawing and Weathering at Treat Island, Maine—Thomas B. Kennedy and Katharine Mather

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Determination of Setting and Hardening Time of High-Alumina Cements by Electrical Resistance Techniques—J. Calleja

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Strap Steel for Prestressed Concrete Structures—K. P. Milbradt
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Properties of Concrete and Their Influence on Prestress Design—R. E. Davis and G. E. Troxell